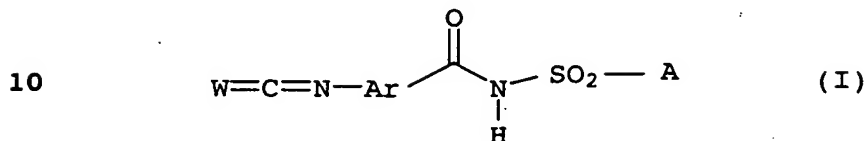


72
69

We claim:

1. A process for preparing phenyl iso(thio)cyanates of the formula I



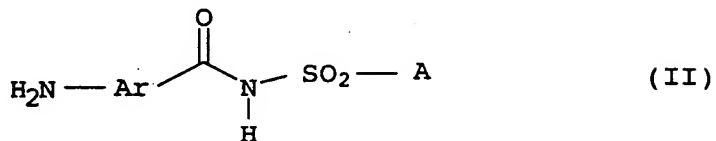
where the variables are as defined below:

W is oxygen or sulfur,

Ar is phenyl which may be mono- or polysubstituted by the following groups: hydrogen, halogen, C₁-C₄-haloalkyl or cyano,

A is a radical derived from a primary or secondary amine or is NH₂,

which comprises reacting a compound of the formula II



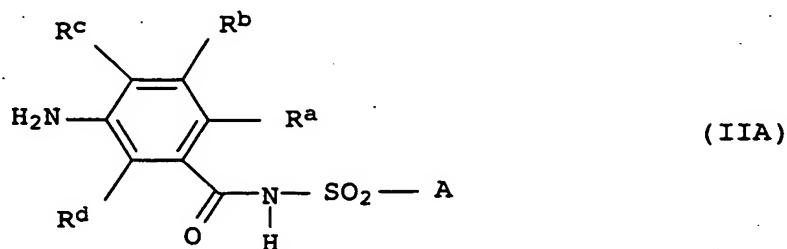
where the variables Ar and A are as defined above or its HCl adduct with phosgene, thiophosgene or diphosgene.

2. A process as claimed in claim 1, wherein the HCl adduct of the compound II is used.
3. A process as claimed in claim 1 or 2, wherein from 0.9 to 2 molar equivalents of phosgene, thiophosgene or diphosgene are used, based on the compound II.
4. A process as claimed in any of the preceding claims, wherein the reaction of the hydrogen chloride adduct of the compound II is carried out in the presence of activated carbon.

- 7370
5. A process as claimed in any of the preceding claims, wherein a compound of the formula IIA

5

10



15 where

R^a , R^b , R^c and R^d independently of one another are hydrogen, halogen, C_1 - C_4 -haloalkyl or cyano and

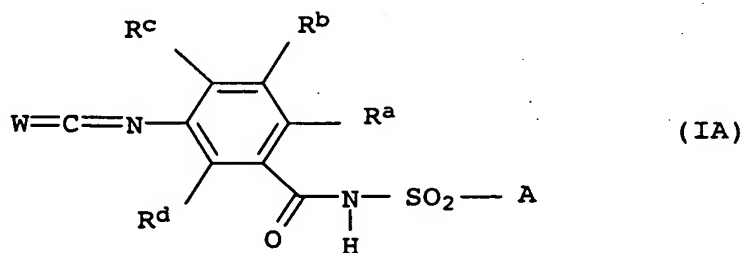
A is as defined above

20

or its HCl adduct is reacted with phosgene, thiophosgene or diphosgene, giving a compound of the formula IA

25

30



35 where the variables R^a , R^b , R^c , R^d , A and W are as defined above.

35

6. A process as claimed in any of the preceding claims, wherein the radical A in formula I is $-N^1R^2$,

where the variables R^1 and R^2 are as defined below:

40

R^1 and R^2 independently of one another represent hydrogen, C_1 - C_{10} -alkyl, C_2 - C_{10} -alkenyl or C_2 - C_{10} -alkynyl which may be unsubstituted or substituted by one of the following radicals: C_1 - C_4 -alkoxy, C_1 - C_4 -alkylthio, CN, NO_2 , formyl, C_1 - C_4 -alkylcarbonyl, C_1 - C_4 -alkoxycarbonyl, C_1 - C_4 -alkylaminocarbonyl, C_1 - C_4 -dialkylaminocarbonyl, C_1 - C_4 -alkylsulfinyl, C_1 - C_4 -alkylsulfonyl,

45

24 71

5 C₃-C₁₀-cycloalkyl, 3- to 8-membered heterocyclyl having one, two or three heteroatoms selected from the group consisting of O, S, N and a group NR⁶ (where R⁶ is hydrogen, C₁-C₆-alkyl, C₃-C₆-alkenyl or C₃-C₆-alkynyl), phenyl, which for its part may have 1, 2, 3 or 4 substituents selected from the group consisting of halogen, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₄-fluoroalkyl, C₁-C₄-alkyloxycarbonyl, trifluoromethylsulfonyl, C₁-C₃-alkylamino, C₁-C₃-dialkylamino, formyl, nitro and cyano,

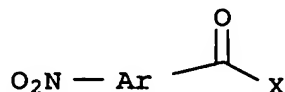
15 C₁-C₁₀-haloalkyl, C₂-C₁₀-haloalkenyl, C₂-C₁₀-haloalkynyl, C₃-C₈-cycloalkyl, C₃-C₁₀-cycloalkenyl, 3- to 8-membered heterocyclyl having one to three heteroatoms selected from the group consisting of O, S, N and a group NR⁶ (where R⁶ is hydrogen, C₁-C₆-alkyl, C₃-C₆-alkenyl or C₃-C₆-alkynyl), phenyl or naphthyl, where C₃-C₈-cycloalkyl, C₃-C₁₀-cycloalkenyl, 3- to 8-membered heterocyclyl, phenyl and naphthyl may for their part have 1, 2, 3 or 4 substituents selected from the group consisting of halogen, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₄-fluoroalkyl, C₁-C₄-alkyloxycarbonyl, trifluoromethylsulfonyl, formyl, C₁-C₃-alkylamino, C₁-C₃-dialkylamino, phenoxy, nitro and cyano, or

25 R¹ and R² together form a saturated or partially unsaturated 5- to 8-membered nitrogen heterocycle which for its part may be substituted by C₁-C₄-alkyl, C₁-C₄-alkoxy and/or C₁-C₄-haloalkyl and may have one or two carbonyl groups, thiocarbonyl groups and/or one or two further heteroatoms selected from the group consisting of O, S, N and a group NR⁶ (where R⁶ is as defined above) as ring members.

35 7. A process as claimed in claim 1, wherein the process additionally comprises the following steps:

i) reaction of an aroyl compound of the formula III

40



(III)

45

1572

in which the variable Ar is as defined above and X is halogen, OH or C₁-C₄-alkoxy with a sulfamic acid amide of the formula IV

5

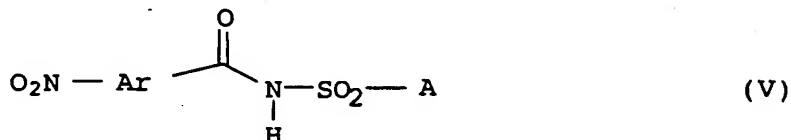


where A is as defined above and

10

ii) reduction of the N-aroylsulfamic acid amide, obtained in step i), of the formula V

15



20

where Ar and A are as defined above, giving a compound of the formula II.

8. A process as claimed in claim 7, wherein in step (ii) the reduction is carried out in the presence of catalytic amounts of transition metals or transition metal compounds.

25

9. A process as claimed in claim 7, wherein in step (ii) the reduction is carried out in the presence of iron and at least one C₁-C₄-carboxylic acid.

30

10. A process as claimed in claim 7, wherein in step (ii) the reduction is carried out in the presence of Raney nickel and hydrogen.

35

11. A phenyl iso(thio)cyanate of the formula I as defined in claim 1.

12. A phenyl iso(thio)cyanate of the formula IA as defined in claim 5, wherein R^a is fluorine, chlorine or cyano, R^c is hydrogen, fluorine or chlorine and R^b and R^d are each hydrogen.

40

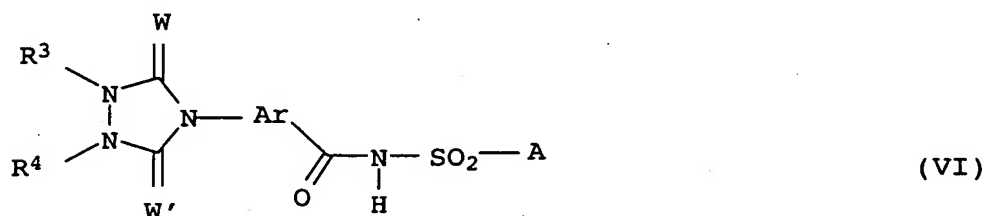
13. A phenyl iso(thio)cyanate of the formula IA as defined in claim 5, wherein A is a radical of the formula NR¹R² where R¹ and R² are as defined in claim 6.

45

7673

14. A phenyl iso(thio)cyanate of the formula IA as claimed in claim 12, wherein R¹ and R² independently of one another are hydrogen, C₁-C₆-alkyl which is optionally substituted by a substituent selected from the group consisting of halogen, cyano, C₁-C₄-alkoxy, C₁-C₄-alkoxycarbonyl, C₁-C₄-alkylthio, C₃-C₈-cycloalkyl, furyl, thienyl, 1,3-dioxolanyl, phenyl which for its part is optionally substituted by halogen or C₁-C₄-alkoxy,
- C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₈-cycloalkyl or phenyl which is optionally substituted by 1 or 2 substituents selected from the group consisting of halogen, C₁-C₄-alkyl, C₁-C₄-fluoroalkyl, C₁-C₄-alkoxy, C₁-C₄-alkoxycarbonyl, nitro and C₁-C₃-dialkylamino, naphthyl or pyridyl or
- R¹ and R² together form a five-, six- or seven-membered saturated or unsaturated nitrogen heterocycle which may optionally contain a further heteroatom selected from the group consisting of N, a group NR⁶ (where R⁶ is as defined above) and O as ring member and/or which may be substituted by one, two or three substituents selected from the group consisting of C₁-C₄-alkyl and C₁-C₄-haloalkyl.

15. A process for preparing compounds of the formula VI



- where W, Ar and A are as defined in claim 1, W' is O or S and R³ and R⁴ independently of one another are hydrogen, cyano, amino, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-haloalkoxy, C₃-C₇-cycloalkyl, C₂-C₆-alkenyl, C₂-C₆-haloalkenyl, C₃-C₆-alkynyl, benzyl, OR⁵ (where R⁵ is hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₃-C₇-cycloalkyl, C₂-C₆-alkenyl, C₃-C₆-alkynyl, unsubstituted or substituted phenyl or unsubstituted or substituted benzyl), C₁-C₃-cyanoalkyl, or R³ and R⁴ together with the nitrogen atoms to which they are attached form a four- to seven-membered heterocycle which is optionally interrupted by sulfur, oxygen, a group NR⁶ (where R⁶ is as defined above) or nitrogen and which is

27 74

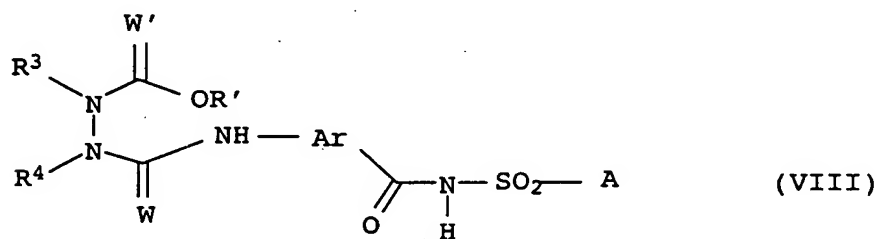
unsubstituted or mono- or polysubstituted by halogen or C₁-C₄-alkyl,

which comprises

- (i) reacting a compound of the formula I as defined in claim 1 with an oxadiazinecarboxylic acid ester of the formula VII



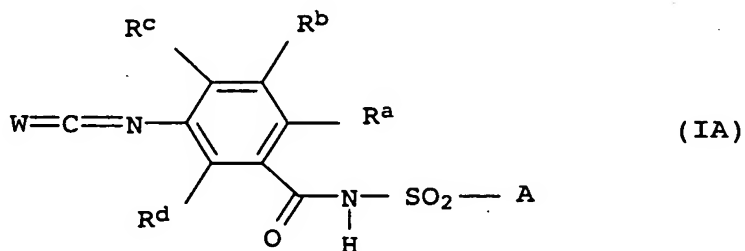
where W' is as defined above and R' is C₁-C₄-alkyl, giving a urea derivative of the formula VIII



where the variables R³, R⁴, R', W, W', Ar and A are as defined above and

- (ii) cyclizing the resulting intermediate VIII, giving a compound of the formula VI.

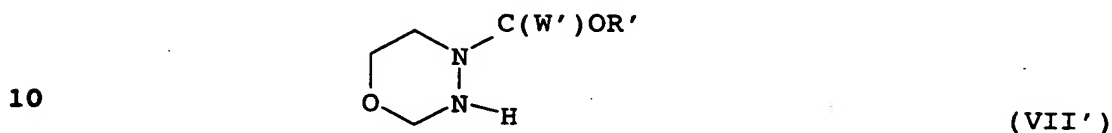
16. A process as claimed in claim 15, wherein the compound of the formula I used in step (i) is a compound of the formula IA



7875

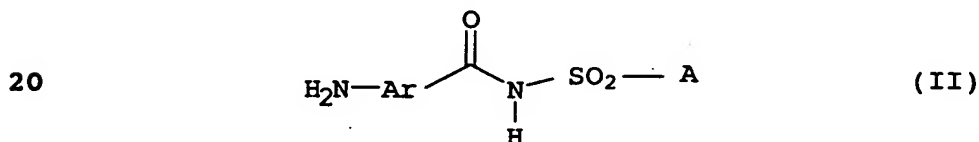
where the variables R^a , R^b , R^c , R^d , A and W are as defined above.

17. A process as claimed in claim 15, wherein the compound VII
5 used in step (i) is a compound of the formula VII'



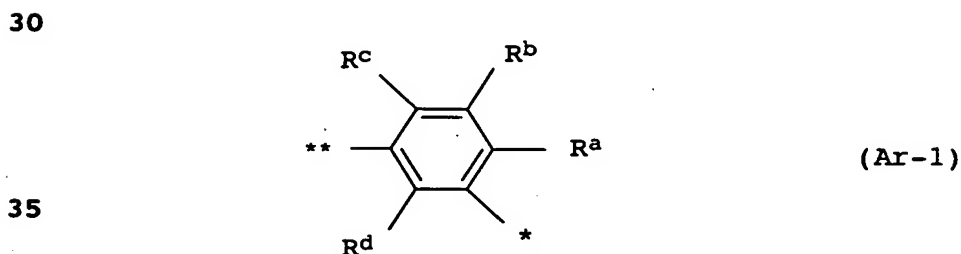
where W' is O or S and R' is C_1 - C_4 -alkyl.

- 15 18. An aminobenzoylsulfamic acid amide of the formula II



25 where the variables are as defined below:

Ar is a group of the formula Ar-1



where R^a is halogen or cyano,

R^b is hydrogen,

40 R^c is halogen or hydrogen,

R^d is hydrogen;

* denotes the point of attachment of Ar to the
C(O) group and

45 ** denotes the point of attachment of Ar to the
nitrogen atom of the amino group;

A is a group of the formula NR^1R^2 ,

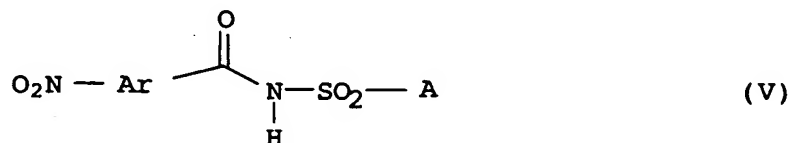
79 76

where one of the radicals R^1 or R^2 is hydrogen, C_1 - C_6 -alkyl, C_2 - C_6 -alkenyl or C_2 - C_6 -alkynyl and the other radical R^1 or R^2 is C_1 - C_6 -alkyl, C_3 - C_6 -cycloalkyl or phenyl.

5

19. A nitrobenzoylsulfamic acid amide of the formula V

10

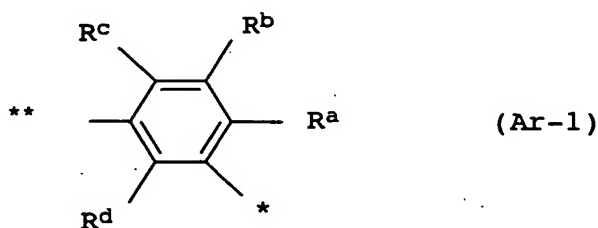


15

where the variables are as defined below:

Ar is a group of the formula Ar-1

20



25

where R^a is halogen or cyano,

R^b is hydrogen,

30

R^c is halogen or hydrogen,

R^d is hydrogen;

* denotes the point of attachment of Ar to the C(O) group and

35

** denotes the point of attachment of Ar to the nitrogen atom of the amino group;

A is a group of the formula NR^1R^2 ,

where one of the radicals R^1 or R^2 is hydrogen,

40

C_1 - C_6 -alkyl, C_2 - C_6 -alkenyl or C_2 - C_6 -alkynyl and the other radical R^1 or R^2 is C_1 - C_6 -alkyl, C_3 - C_6 -cycloalkyl or phenyl.

45

20. A process for preparing aminobenzoylsulfamic acid amides of the formula II as claimed in claim 18, which process comprises the following steps:

80 77

a) reaction of an aroyl compound of the formula III.

5



10

where Ar is as defined in claim 19 and X is halogen or C₁-C₄-alkoxy

with a sulfamic acid amide of the formula IV

15

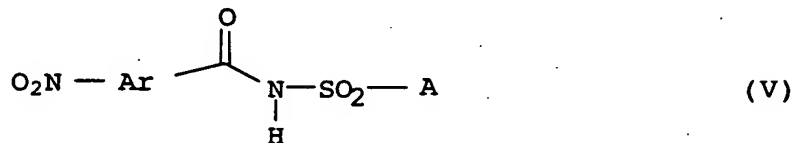


where A is as defined in claim 19; and

20

b) reduction of the nitrobenzoylsulfamic acid amide, obtained in step a), of the formula V

25



30

where Ar and A are as defined in claim 19

to the aminobenzoylsulfamic acid amide of the formula II as claimed in claim 18.

35

21. A process as claimed in claim 20, wherein in step b) the reduction is carried out in the presence of catalytic amounts of transition metals or transition metal compounds.

40

45